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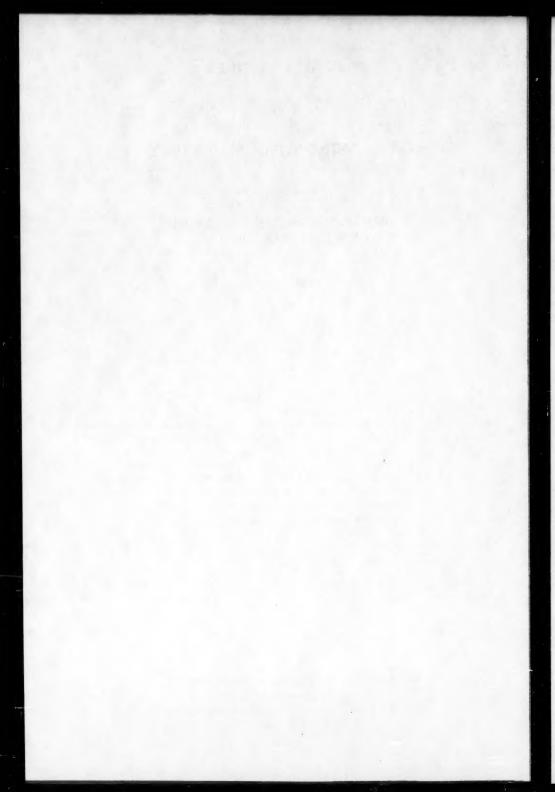
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- Energy dependent delay measurements of quasi-periodic oscillations in low-mass X-ray binaries (Wijers, R.A.M.J., Paradijs van, J., Lewin, W.H.G.), 228, 17P